WHAT IS CLAIMED IS:

1. A cutting insert, such as for turning aluminum, comprising:

a base body comprising cemented carbide;

at least one cutting body comprising ceramic material;

said base body comprising at least one recess;

said at least one recess being configured to receive said at least one cutting body;

said at least one cutting body being joined to said base body;

said at least one cutting body having a geometric shape;

said at least one recess having a geometric shape; and

at least a portion of the geometric shape of said at least one cutting body being congruent with the geometric shape of said at least one recess.

2. The cutting insert according to claim 1, wherein the geometric shape of said at least one ceramic cutting body is the shape of a circular truncated cone.

3. The cutting insert according to claim 2, wherein:

said at least one ceramic cutting body has a first end surface and a second surface disposed at opposite ends of said truncated cone;

said first end surface is smaller in diameter than said second

end surface;

said at least one recess comprises a bottom surface and a side surface disposed substantially transverse to said bottom surface;

said first end surface is attached to said bottom surface of said at least one recess; and

said second end surface comprises a cutting edge formed at the exposed circular perimeter edge of said second end surface of the circular truncated cone and extends in the shape of a partial circle.

4. The cutting insert according to claim 3, wherein the circular truncated cone is a perpendicular circular truncated cone.

5. The cutting insert according to claim 4, wherein said cutting edge comprises a partial circle of at least 200°.

6. The cutting insert according to claim 5, wherein said cutting edge comprises a partial circle of not more than 230°.

7. The cutting insert according to claim 6, wherein said cutting insert defines a clearance angle of < 10°.

8. The cutting insert according to claim 7, wherein said clearance angle is 7 ± 2°.

9. The cutting insert according to claim 8, wherein said at least one cutting body is bonded or brazed into said at least one recess.

10. The cutting insert according to claim 9, wherein said base

body comprises at least one groove extending transversely to the longitudinal axis of said cutting insert for fastening said cutting insert to a toolholder.

11. The cutting insert according to claim 10, wherein said at least one groove is defined on either side by raised portions extending substantially parallel to said at least one groove.

12. The cutting insert according to claim 11, wherein said cutting insert is configured as an indexable insert.

13. The cutting insert according to claim 12, wherein said indexable cutting insert is fitted with two, three, or four cutting bodies.

14. The cutting insert according to claim 13, wherein the maximum diameter of said at least one cutting body is in the range of 4 ± 0.05 mm to 10 ± 0.05 mm.

15. A method of using a cutting insert comprising: a base body comprising cemented carbide; at least one cutting body comprising ceramic material; said base body comprising at least one recess; said at least one recess being configured to receive said at least one cutting body; said at least one cutting body being joined to said base body; said at least one cutting body having a geometric shape; said at least one recess having a geometric shape; and at least a portion

of the geometric shape of said at least one cutting body being congruent with the geometric shape of said at least one recess; said method comprising the step of:

recessing or copy-turning a workpiece, in particular at a high rotating speed.

16. The method according to claim 15, wherein said step of recessing or copy-turning comprises recessing or copy-turning light alloy workpieces, in particular workpieces made of aluminum or aluminum alloys.

17. A cutting insert comprising:

a base body comprising cemented carbide;

at least one cutting body comprising ceramic material;

said at least one cutting body comprising a cutting edge to cut into metal; and

said at least one cutting body being joined to said base body.

18. The cutting insert according to claim 17, wherein:

said at least one recess is substantially, congruently shaped with respect to at least a portion of said at least one ceramic cutting body;

said at least one ceramic cutting body is in the shape of a circular truncated cone;

said at least one ceramic cutting body has a first end surface and a second surface disposed at opposite ends of said truncated cone;

said first end surface is smaller in diameter than said second end surface;

said at least one recess comprises a bottom surface and a side surface disposed substantially transverse to said bottom surface;

said first end surface is attached to said bottom surface of said at least one recess;

said second end surface comprises a cutting edge formed at the exposed circular perimeter edge of said second end surface of the circular truncated cone and extends in the shape of a partial circle;

said cutting edge comprises a partial circle of at least 200° and not more than 230°;

said cutting insert defines a clearance angle of one of (A) and (B):

(A) < 10°; and

(B) 7 ± 2°;

said at least one cutting body is bonded or brazed into said at least one recess;

said base body comprises at least one groove extending

transversely to the longitudinal axis of said cutting insert for fastening said cutting insert to a toolholder;

said at least one groove is defined on either side by raised portions extending substantially parallel to said at least one groove;

said cutting insert is configured as an indexable insert;

said indexable cutting insert is fitted with two, three, or four cutting bodies; and

the maximum diameter of said at least one cutting body is in the range of 4 ± 0.05 mm to 10 ± 0.05 mm.

19. A method of using a cutting insert comprising: a base body comprising cemented carbide; at least one cutting body comprising ceramic material; said base body comprising at least one recess; said at least one recess being configured to receive said at least one cutting body; and said at least one cutting body being joined to said base body.; said method comprising the step of:

recessing or copy-turning a workpiece, in particular at a high rotating speed.

20. The method according to claim 19, wherein said step of recessing or copy-turning comprises recessing or copy-turning light alloy workpieces, in particular workpieces made of aluminum or aluminum alloys.

CUTTING INSERT AND USE THEREOF, AND A CUTTING INSERT ESPECIALLY FOR TURNING ALUMINUM

ABSTRACT OF THE DISCLOSURE

A cutting insert made of cemented carbide and the use thereof for recessing or copy-turning, preferably at a high rotating speed. The cutting insert has at least one recess for insertion therein of a cutting body comprising a cutting material different from cemented carbide to form a firm connection, the cutting body having a cutting edge formed thereon. The cutting insert has high mechanical strength even with small dimensions in the high-temperature range because the cutting body comprises a ceramic cutting material and has a geometric shape at least a portion of which is congruent with the geometric shape of the recess. The abstract of the disclosure is submitted herewith as required by 37 C.F.R. §1.72(b). As stated in 37 C.F.R. §1.72(b): "A brief abstract of the technical disclosure in the specification must commence on a separate sheet, preferably following the claims, under the heading "Abstract of the Disclosure." The purpose of the abstract is to enable the Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure. The abstract shall not be used for interpreting the scope of the claims."

Therefore, any statements made relating to the abstract are not intended to limit the claims in any manner and should not be interpreted as limiting the claims in any manner.